

Claims

1. A method of applying a fluoropolymer film to a porous or microporous or other body, comprising exposing the body to cold plasma polymerisation using a pulsed gas regime to form either (i) an adherent layer of unsaturated carboxylic (e.g. acrylic) acid polymer on the surface and then derivatising the polymer to attach a perfluoroalkyl group terminating in $-\text{CF}_3$ trifluoromethyl, or (ii) a polymer of a perfluorocarbon monomer.
2. A method of applying a fluoropolymer film according to claim 1 wherein a combination of electrical and gas pulsing is used.
3. A method of applying a fluoropolymer film according to claim 1 or 2 wherein the cold plasma polymerisation uses a perfluorocarbon monomer or an unsaturated carboxylic acid.
4. A method of applying a fluoropolymer film according to claim 1, 2 or 3 where both the "gas on" and "gas off" times are from 0.1 microsecond to 10 seconds.
5. A method according to any preceding claim, wherein perfluorocarbon monomer is not used and wherein the pulsed gas used is oxygen.
6. A method according to claim 1, 2, 3, or 4 wherein the pulsed gas used is a noble or inert gas or is hydrogen, nitrogen or carbon dioxide.
7. A method according to claim 2, 3, or 4 wherein acrylic acid polymer precursor or perfluorocarbon monomer is pulsed directly without a process gas.
8. A method according to any preceding claim wherein the body is not microporous.

9. A method according to any preceding claim, wherein perfluorocarbon monomer is not used and wherein the plasma power applied is in the range 1 Watt to 100 Watt.
- 5 10. A method according to claim 9, wherein the plasma power applied is 1.5 Watt to 7 Watt.
11. A body having a hydrophobic surface obtained by a method according to any preceding claim.
- 10 12. A body according to claim 11, whose substrate is carbonaceous, ceramic, metallic or a combination of these.

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